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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,018	11/20/2003	Nicholas D. Fifer	TUC920030149US1	5659

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EXAMINER	
SZETO, JACK W	

ART UNIT	PAPER NUMBER
2113	

DATE MAILED: 06/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Offic Action Summary	Application No.	Applicant(s)	
	10/721,018	FIFER ET AL.	
	Examiner	Art Unit	
	Jack W. Szeto	2113	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *20 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-8 and 17-24* is/are allowed.

6)☒ Claim(s) *9-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/20/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Non-Final Official Action

Status of the Specification and Claims

Claims 9-16 are rejected under 35 USC 101.

Claims 1-8 and 17-24 are allowed.

Specification is objected to based on minor informalities.

Specification Objections, Minor Informalities

The Specification is objected to based on the following informalities:

On page 8, para 0030, there is an open parenthesis "(" without a closed parenthesis.

Appropriate corrections are recommended.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 9-16 are rejected under 35 U.S.C. 101 as claiming non-statutory subject matter.

As per the specification, on page 18, para 0060, Applicant defines the article of manufacture may comprise of transmission media. Code on a transmission media is not tangible subject matter, thus these claims are non-statutory

Allowable Subject Matter

Claims 1-8 and 17-24 are allowed and further modifications to the scope of the claimed subject matter may jeopardize this indication of allowable claims.

Claim 17 contains the same subject matter as claim 1. Thus, only claim 1 will be listed below and italicized segments indicate subject matter which over come prior arts.

As per claim 1:

A method comprising:

maintaining in a first data structure in a first storage controller,

a first index for a first write data task for writing data to a storage device coupled to the first storage controller and for writing data to a storage device coupled to a second storage controller,

wherein the *first write data task comprises a first sequence of data writing subtasks in which each subtask has a sequence number identifying the position of the subtask in the sequence of subtasks of the first write data task* and

wherein the first index identifies the sequence number of the next subtask in sequence to be sent by a first processor of the first storage controller *to a second processor of the first storage controller;*

adding a subtask of said first sequence of data writing subtasks to a queue;

comparing the sequence number of a subtask in the queue to the index of the first data structure; and

if the subtask in the queue has the sequence number identified by the index, *sending the subtask to a second processor of the first storage controller to generate a*

write command to the second storage controller.

The Examiner is unable to find independent art or in combination to overcome the italicized segments of claim 1, thus claim 1 is allowable. The specific method of:

a sequence number assigned to each subtask,

having an index identifying the next sequence number,

inserting the subtasks into a queue,

comparing the subtask in the queue to the index and sending the subtask from the 1st processor to 2nd processor to generate a write command

overcomes prior art. There are various prior art that disclose methods which assign sequence numbers to messages/commands or data being transmitted from the primary storage controller to a secondary controller (i.e. United States Patent No. 6,671,777 and 6,996,691). Sicola (Patent No. 6,996,691) discloses a very similar method of assigning a sequence number to a write command, queuing it before sending it to the remote site. However, this art lacks disclosure of the write command comprises of subtasks which are assigned a sequence number. Also lacking, is the order of operations in Sicola. Sicola's method comprises of comparing the command's sequence number before inserting into a queue [see figure 14 and column 17, line 20 to column 18, line 67]. Finally, Sicola discloses sending the command from the primary controller to the remote site directly instead of going through a 2nd processor on the primary controller. Because of these deficiencies and the lack of motivation to combine other art to overcome these deficiencies, claims 1-8 and 17-24 are allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack W. Szeto whose telephone number is (571) 272-1537. The examiner can normally be reached on M-F 8 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on (571) 272-3645. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jws

BRYCE P. BONZO
PRIMARY EXAMINER